

4. Summary of Past and Present Pollution Control Efforts

The Idaho Forest Practices Act (FPA) governs the harvest and reforestation of all timberlands in Idaho. These rules are, in part, requirements for best management practices (BMPs) designed to abate erosion and retard sediment delivery to the stream. The Idaho Department of Lands (IDL) has implemented the act's rules and regulations aggressively over the past 15 years. Currently, the majority of the forested lands in the Lower Kootenai and Moyie River Subbasin are managed by the state or federal government. This large state and federal ownership helps to ensure that the rules and regulations of the FPA are implemented.

All harvests managed by the U.S. Forest Service (USFS) must meet INFISH (the federal Inland Native Fish Strategy) guidelines. These guidelines prescribe 300-foot wide buffers for streams with fish uses. Current and proposed timber sales within the basin include various road projects aimed at improving water quality. Road projects include road obliteration, resurfacing, slope stabilization, stream crossings, and drainage improvements.

4.1. Forestry

The FPA is state policy and is legislatively mandated. A Forest Practices Advisory Committee composed of various interest groups has been established with the specific responsibility to review and improve forestry BMPs such that forest practices will be conducted using the latest economically sound information and practices to protect water quality. The Committee conducts research into forest practice questions and gathers information from various sources, effectively providing a feedback loop for continuous improvement of forest practices. Many of the activities now being implemented in the Lower Kootenai River Subbasin to improve water quality are the direct result of improved practices and BMPs put in place by the FPA.

The FPA was codified during the mid-1970s to comply with Section 208 of the federal Clean Water Act (CWA). The FPA established mandatory rules and regulations leading to BMPs to be used during forest practices to protect surface water quality (IDL 1998). Espinosa et al (1997) described estimated sediment delivery in amounts greater than USFS management plan goals from the 1950s through the 1970s, and noted that the awareness of watershed and habitat degradation problems helped to initiate a moderation of timber and road construction impacts in the early 1980s. On-site audits of FPA compliance were conducted in 1978, 1984, 1988, 1992, 1996, 2000, and 2004. Because of these audits, BMPs have been revised to promote better water quality protection.

Under the FPA, the forest industry and the State of Idaho have developed and are implementing a cumulative watershed effects (CWE) process for forest lands in Idaho. The goal of this methodology is to systematically examine forested watersheds and identify on-the-ground cases where forest management may be contributing to water quality problems as defined by the CWA and state standards. When problems are identified, the process leads directly to corrective management prescriptions where the problem is occurring. CWE assessments have been completed on a significant portion of the Lower Kootenai River Subbasin (including 80% of the Deep Creek drainage). CWE reports define corrective

management actions where on-the-ground conditions have been documented. These actions include BMPs based on FPA guidelines to ensure that forestry activities are not impairing water quality conditions. DEQ has been working closely with the FPA committee, IDL, and private industry to ensure BMPs are implemented, and will continue to do so.

4.1.1. Idaho Department of Lands

The Idaho Department of Lands (IDL) performs a variety of pollution control efforts in the Lower Kootenai River Subbasin. These efforts include enforcement of FPA rules, FPA education, Stewardship Forestry Assistance, Stewardship Cost-Share Programs, general forestry education, management of State endowment lands, and administration and enforcement of the Minerals Act. The FPA requires forest landowner compliance with forestry BMPs. Approximately 500 logging compliances are issued annually out of the Kootenai Valley Area office in Bonners Ferry, Idaho (2004), and approximately 200 inspections of logging operations are performed each year to ensure compliance with the FPA. These on-site inspections include review of road construction and maintenance, stream crossing construction, stream protection zone encroachment by equipment, and road/skidtrail locations. Stewardship Forestry Assistance includes on-site visits with landowners providing education, information and technical training on forestry and stream-side BMPs. The State administers the Stewardship Program which includes assistance to landowners through cost sharing forestry, riparian, and agroforestry practices. The department also supports the Logger Education and Professionalism Program and Pro-Logger Program by providing workshops and training in the areas of logging BMP and FPA rules. Topics presented in 2003 included “Installing Culverts to Meet Fish Passage Guidelines.” In 2004, presentations to logger groups covered Forest Practices rules regarding skid trail location and maintenance.

The IDL administers approximately 24,500 acres of endowment land within the Deep Creek watershed for the purpose of generating revenue for the trust beneficiaries (primarily public schools, the University of Idaho, and charitable institutions). Administration of this land meets and exceeds the FPA rules. In August of 2004, the local supervisory area voluntarily implemented the terms of the **Idaho Forestry Program, Snake River Basin Adjudication (SRBA)**. These terms include increased operational restrictions within riparian protection zones, and stringent road construction, reconstruction, design, and maintenance requirements that exceed the current Idaho FPA BMP requirements with the intent of providing additional protection for threatened and endangered species of fish (including bull trout, which are present in the Kootenai River drainage). Stream crossing structures are engineered to meet 50-year peak flows. Roads are inventoried and inspected on a periodic basis. Pollution (sediment and temperature) management problems are identified and repaired as soon as weather conditions and funding permit.

From the time of the initial 1998 §303(d) list until now (2005), the IDL, in conjunction with cooperating large industrial forest landowners, has undertaken a number of capital improvement projects expressly to reduce potential sediment generation from existing forest roads. These include applying crushed rock surfacing and/or drainage upgrades on the following roads: Trail Creek (4.82 miles); Mutiny Point (13.0 miles); Beaver Lake (1.07 miles); Contrary Creek (1.01 miles); Trail Creek S. 17 (0.36 miles); North Bloom Lake (1.5 miles); Twentymile Peak (5.0 miles); and Highland Creek (3.23 miles).

In addition to the 30 miles of road improvements listed above, the IDL has permanently abandoned approximately two miles of substandard spur road. The IDL also routinely regulates public access and limits purchaser use of roads using a variety of closure measures at times when potential is great for damage to running surface water, in order to control erosion and sediment production. Purchasers of timber sales are required to maintain active roads over the duration of individual contracts. Inactive sale roads are identified and erosion control measures installed seasonally and/or prior to cancellation. At other times, the IDL uses dedicated monies collected from timber sale purchasers to fund completion of contract and/or State-crew deferred road maintenance projects in order to keep drainage structures operational and correct problems as they are detected.

4.2. Agriculture

The lowland portion of the basin, the Kootenai River floodplain, is largely owned by private parties. Agriculture practices in the valley consist of growing spring and winter wheat and canola, spring barley, timothy, white clover, and hops. In the bench areas, spring and winter wheat, spring barley, alfalfa hay and seed, and grass hay are grown. Some livestock grazing does occur within the basin. Current watershed improvement projects include fencing and hardening of livestock stream crossings, riparian vegetation restoration, and bank stabilization.

In 1979 the original Agricultural Pollution Plan (Ag Plan) was developed in response to Section 208 of the Clean Water Act and represents the agricultural portion of the State Water Quality Management Plan. Subsequently the plan has been revised in 1983 and 1991. The most current Ag Plan, *Idaho Agriculture Pollution Abatement Plan, 2003*, sets goals and provides guidance for the management of all nonpoint source related activities throughout the state.

Proposed and currently implemented pollution control efforts will help restore water quality. Field observations note that implemented projects have been generally effective in the basin. Further development and implementation of pollution control efforts will help to achieve water quality standards within a reasonable time. Pre- and post-implementation monitoring will help to determine the prolonged effectiveness of pollution control efforts.

According to the 2000 United State Department of Agriculture (USDA) Soil Survey of Boundary County Area, Idaho:

About 68,000 acres in the survey area is used for crop production and hay and pasture. Major crops are spring wheat, winter wheat, oats, barley, alfalfa, clover seed, and canola. Ornamental nursery production and irrigated hops make up a small but significant acreage. Most of the cropland is located on the Kootenai River floodplain, which has been drained and protected from flooding by a system of ditches, pumps, and levees. The remainder of the cropland and most of the hay land and pasture is located on the high benches of cleared forestland. Some of the pasture is located on wet bottom lands and meadows along the major creeks of the area.

Timber production is carried out by both individual landowners and large timber companies.

Livestock grazing is becoming more important to the area's economy. Livestock operations include cow-calf or beef enterprises, generally less than 100 cows. Some of the large timber companies lease out their cutover timberlands for livestock grazing. Some of the federal- and state-owned lands are also leased out for livestock grazing. The average size of individual farms and ranches in the area is about 300 acres. Large corporate timberland tracts range in size from 1,000 to over 10,000 acres.

The Boundary Soil Conservation District was formed on December 6, 1947, and is the Designated Management Agencies (DMA) in charge of guidance and program implementation for private and state agricultural lands. Originally, the purpose of the district was to conserve the soil resources of Boundary County, but it has expanded to include conservation and development of all natural resources.

4.2.1. Agronomy

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading "Detailed Soil Map Units." Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

4.2.2. Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the USDA. It is of major importance in meeting the nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the USDA recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our nation's prime farmland.

The USDA defines prime farmland as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pasture, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6%. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

Table 13 lists projects within the Lower Kootenai and Moyie Subbasins provided by the Boundary County Soil Conservation District.

Table 13. Projects within the Lower Kootenai and Moyie River Subbasins.

Project Description	Date Implemented	Effectiveness	Comments	Assessment Unit
Ruby Creek, bank barbs, tree and shrub planting, riprap. Funded/owner	NA	Reduce bank erosion, increase shading	Improve water quality	17010104PN020_02 17010104PN020_03
Conservation Reserve Program (CRP), Planting permanent cover on approximately 1200 acres.	1985 through present	Eliminated sheet and rill erosion	Good soil conservation practice	17010104PN020 17010104PN050
Conservation Tillage Systems, reduced tillage and direct seeding systems.	1985 through present	Reduce sheet/rill erosion	Keep crop residues on soil surface	17010104PN040 17010104PN050
Rock Creek, Hydro Seeding project with ITD. Permanent grass, legume/shrub mixture. Highway 95	1996	Excellent cover for erosion control	Plants well established	17010104PN037_02 17010104PN037_03
Curley Creek, riparian project, riparian fencing and hardened livestock crossing/grazing system.	1996	Good riparian vegetation recovery	Reduced livestock bank trampling	17010104PN035_02 17010104PN035_03
Ruby Creek, road stabilization culvert replacement and rock armor on shoulder. Funded by EWP/(5) landowners	1996-97	Reduce sediment delivery to stream	Improve water quality	17010104PN020_02 17010104PN020_03
Fall Creek, stabilization rock rip rap rock, stream bank stabilization,	1997	Reduce sediment	Improve water quality	17010104PN021_02 17010104PN021_03

Project Description	Date Implemented	Effectiveness	Comments	Assessment Unit
protected local community well. Funded by EWP				
Fall Creek road stabilization. Rock gabion structures reduce road bank erosion. Funded by EWP	1997	Reduce road bank sloughing	Improve Fall Creek water quality	17010104PN021_02 17010104PN021_03
Twenty Mile Creek, stabilization, funded by EWP	1997	Reduce stream bank erosion	Improved water quality	17010104PN027_03 17010104PN028_02
Deep Creek, install toe rock, stabilize Deep Creek stream bank. funded by EWP	1997	Reduce stream bank erosion	Improve water quality	17010104PN015_04 17010104PN018_04 17010104PN019_04 17010104PN022_03 17010104PN023_0L 17010104PN025_02
Brown Creek, bridge stabilization reinforce bridge washout, funded by EWP	1997	Rock rip rap	Reduce sediment; improve water quality	17010104PN027_02
Ruby Creek, road stabilization ¾ mile repair. Repair massive road slump and erosion. Funded by EWP	1997	Rock armor and seeding	Reduce sediment	17010104PN020_02 17010104PN020_03
Kootenai River, bank stabilization, funded by EWP disaster of flooding with large snow pack year.	1997	Eliminated bank sloughing	Bank erosion eliminated, Need woody plantings	17010104PN031_08 17010104PN029_08 17010104PN012_08 17010104PN001_08
Round Prairie Creek, Restore wetland hydrology. Funded by WRP	1998	Restore riparian and meadows	Improved wildlife habitat	17010104PN008_03 17010104PN010_02 17010104PN010_03
Deep Creek, stream bank stabilization, reduce stream bank erosion. Funded by EQIP	1998	Restore riparian and meadows	Improved wildlife habitat	17010104PN015_04 17010104PN018_04 17010104PN019_04 17010104PN022_03 17010104PN023_0L

Project Description	Date Implemented	Effectiveness	Comments	Assessment Unit
				17010104PN025_02
Animal Waste Systems: Reduce animal waste run off and reduce nutrient pollution into water bodies. Store animal wastes. Funded by EQIP.	1998 and 2003	Eliminate manure run off	Excellent water quality benefit	NA
Deep Creek, bank barbs, rip rap, log revetment, and set-back fencing. Funded by EQIP.	1999 and 2000	Bank erosion eliminated; reduced sediment	Log revetment trap sediment	17010104PN015_04 17010104PN018_04 17010104PN019_04 17010104PN022_03 17010104PN023_0L 17010104PN025_02
North Hill hydro seeding project with ITD along Highway 95.	2000	Bank erosion eliminated; reduced sediment	Log revetment trap sediment	NA
Boundary Creek, WRP(Deon Hubbard) Restore Kootenai River floodplain wetlands and hydrology. Funded by USDA WRP	2000	Restored hydrology; Enhanced wildlife habitat	Floodplain flood storage; enhance riparian vegetation	17010104PN002_02 17010104PN002_03
Deep Creek, log revetment structures along outside bend. EQIP funded Jeff Ennis	2000	Restored hydrology; Enhanced wildlife habitat; Pole plantings	Floodplain flood storage; enhance riparian vegetation 70% survival poles	17010104PN015_04 17010104PN018_04 17010104PN019_04 17010104PN022_03 17010104PN023_0L 17010104PN025_02
Bane Creek, tree and shrub plantings. approximately 3000 trees and shrubs planted per year in logged over areas within watershed.	2000-2004	Improve watershed and shading of drainages	Improve overall small watershed health	17010104PN036_02
Smith Creek, dike road repair-rock rip	2002	Reduced bank erosion	Stream bank armored	17010104PN007_02 17010104PN007_03

Project Description	Date Implemented	Effectiveness	Comments	Assessment Unit
rap, Bio-eng. and rock barbs. Funded USDA WRP		and sediment.		
Curley Creek, WRP restore riparian and associated semi wet meadows. Restore, floodplain hydrology	2002	Enhanced riparian zones. Recharge groundwater	Flood control; enhanced hydrology	17010104PN035_02 17010104PN035_03
Kootenai drain ditch and creeks, CRP filter strip under continuous sign up. Permanent cover along drain ditches and creeks	2002 through present	Reduce surface pollutants	Fair to good shading along water bodies	17010104PN031_08 17010104PN029_08 17010104PN012_08 17010104PN001_08
Cow Creek, tree and shrub plantings. Planting trees and shrubs within watershed WHIP/FIP funded	2002-2003	Improve watershed and shading	Improve overall watershed health	17010104PN030_02 17010104PN030_03
Curley Creek, tree and shrub planting and forest, road seeding SWCA funded	2002-2004	Reduce forest and watershed erosion	Improve riparian	17010104PN035_02 17010104PN035_03
Kootenai River, WRP restore floodplain wetlands and hydrology. Funded by USDA WRP	2003	Reduce forest and watershed erosion	Improve riparian	17010104PN031_08 17010104PN029_08 17010104PN012_08 17010104PN001_08
Ball Creek, WRP restore Kootenai River floodplain wetlands and hydrology. Funded by TNC, USFWS, and USDA WRP program	2003	Restore floodplain hydrology	Enhance wildlife habitat	17010104PN011_02
Animal waste systems. Waste systems designed	2003-2004	Reduce animal waste run off	Improve water quality	17010104PN050

Project Description	Date Implemented	Effectiveness	Comments	Assessment Unit
waiting Funded by EQIP				
Trail Creek, stream bank and shoreline protection. Funded by EQIP	2004	Reduce bank erosion	Proposed willow and rock armor	17010104PN026_02 17010104PN026_03
Deep Creek, bank barbs, rip rap, brush revetment, set-back fencing, and tree and shrub plantings on bank- 300 linear feet of bank total. Funded by EQIP	2005	Eliminate bank sloughing, increased shading	Brush revetment. traps sediment, fencing eliminates livestock bank trampling	17010104PN015_04 17010104PN018_04 17010104PN019_04 17010104PN022_03 17010104PN023_0L 17010104PN025_02
Deep Creek (2) shallow wildlife ponds and willow plantings, WHIP/landowner funded	2005	Surface runoff retention, pollutant filtering	Tansy population onsite will also be reduced; enhanced wildlife habitat	17010104PN015_04 17010104PN018_04 17010104PN019_04 17010104PN022_03 17010104PN023_0L 17010104PN025_02
Unnamed tributary Kootenai River, (2) wildlife ponds WHIP/landowner funded	2005	Surface runoff retention	Enhance wildlife habitat	17010104PN-
Long Canyon Creek, stream bank and shoreline protection, 600 linear feet EQIP Special Projects/landowners funded	2006	Reduce bank erosion, increase shading, enhance fish habitat	Proposed riparian forest buffer with bioengineering and some toe rock	17010104PN008_02
Cow Creek, prescribed grazing (30 acres), pasture and hayland planting (30 acres), forest management (60 acres), wildlife ponds EQIP/landowner	2006-2010	Reduce sheet and rill erosion	Reduced soil compaction, improve plant vigor, reduce fuel loads, improve forest health	17010104PN030_02 17010104PN030_03

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Project Description	Date Implemented	Effectiveness	Comments	Assessment Unit
funded				
Conservation cover, grass and legumes in rotation hay crops planted approx. 5000 acre/year planted	On going	Reduced sheet/rill erosion	Good soil quality; improve soil tilth	17010101-030-060